

[METHOD OF FABRICATING FLASH MEMORY CELL]

Abstract

A method of fabricating a flash memory cell is provided. The method includes providing a substrate and forming a patterned mask layer over the substrate. Using the patterned mask layer as an etching mask, the substrate is etched to form a trench. Thereafter, a first dielectric layer is formed over the substrate and then a first gate and a second gate is formed beside each sidewall of the trench. A first source/drain region is formed in the substrate at the bottom of the trench. A second dielectric layer is formed over the substrate and then a passivation layer is formed over the second dielectric layer. Afterwards, a portion of the passivation layer, the second dielectric layer and the first dielectric layer are removed. A third gate is formed in the trench and then the mask layer is removed. A third dielectric layer is formed on the substrate. Thereafter, a fourth and a fifth gate are formed beside the respective sidewall of the first gate and the second gate. A second source/drain region is formed in the substrate on each side of the fourth and the fifth gate.